

Mutants of Green Fluorescent Protein

ABSTRACT

The present invention provides mutants of the Green Fluorescent Protein (GFP) of *Aequorea victoria*. Specifically provided by the present invention are nucleic acid molecules encoding mutant GFPs, the mutant GFPs encoded by these nucleic acid molecules, vectors and host cells comprising these nucleic acid molecules, and kits comprising one or more of the above as components. The invention also provides methods for producing these mutant GFPs. The fluorescence of these mutants is observable using fluorescein optics, making the mutant proteins of the present invention available for use in techniques such as fluorescence microscopy and flow cytometry using standard FITC filter sets. In addition, certain of these mutant proteins fluoresce when illuminated by white light, particularly when expressed at high levels in prokaryotic or eukaryotic host cells or when present in solution or in purified form at high concentrations. The mutant GFP sequences and peptides of the present invention are useful in the detection of transfection, in fluorescent labeling of proteins, in construction of fusion proteins allowing examination of intracellular protein expression, biochemistry and trafficking, and in other applications requiring the use of reporter genes.